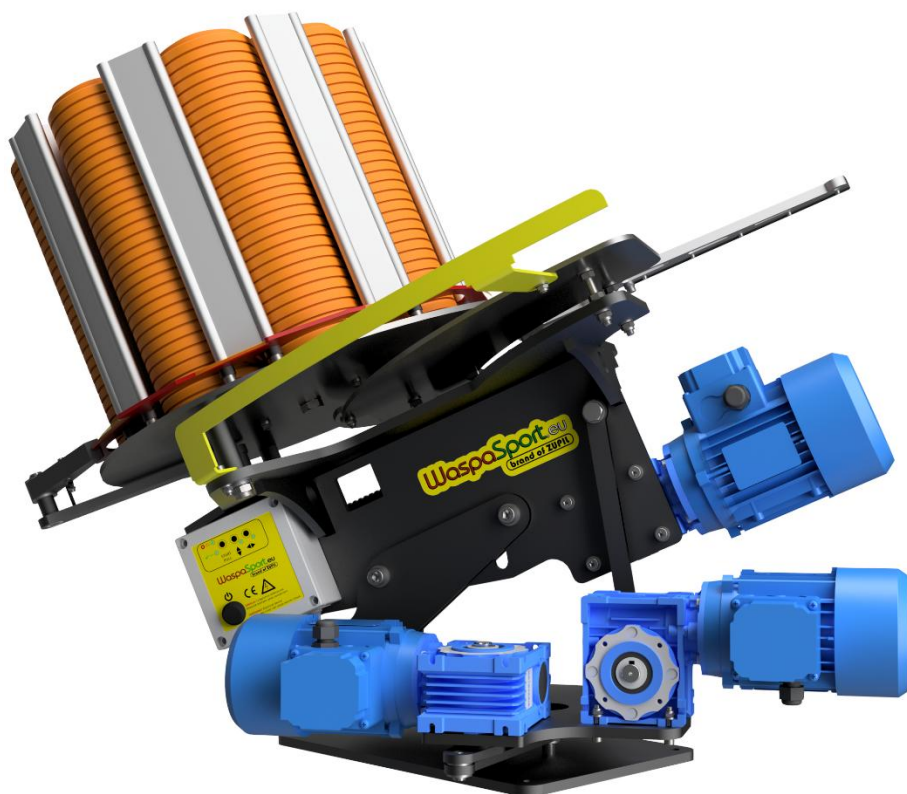


Eagle L240

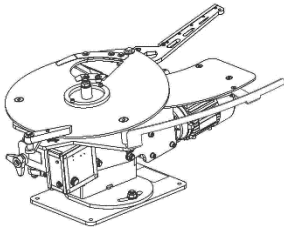
Eagle LH240

Eagle LHV240

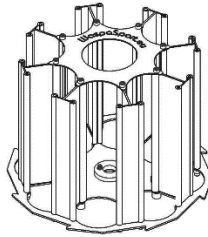
User Manual



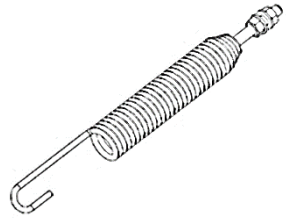
CONTENT



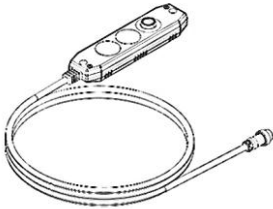
Throwing machine



Clay carousel



Main spring



Control cable

GENERAL INFORMATION

This manual contains all necessary information to allow correct and safe use of the machine and its maintenance. All information, specification and technical notes are the best of our knowledge and experience.

The data and descriptions contained in this release do not constitute the basis for future claims.

SAFETY INFORMATION



This symbol alarms the user about important information regarding safety during the use or maintenance of the machine.

Such information should be read with particular care to avoid any negative consequences.



This symbol warns the user about the risk of electric shock under certain circumstances. Therefore, follow the guides in order to avoid it.

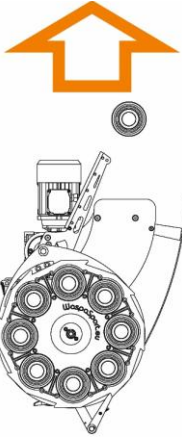
The highest noise level emitted by this device is 60 dB.

WARNING!	
	WEAR EYES PROTECTION
	WATCH OUT FOR FAST MOVING THROWING ARM
	STANDING IN FRONT OF MACHINE IS STRICTLY FORBIDDEN
	READ USERS MANUAL BEFORE USING THE DEVICE

It is absolutely necessary to follow the information and instructions presented on the sticker that is located on the frame of the machine.

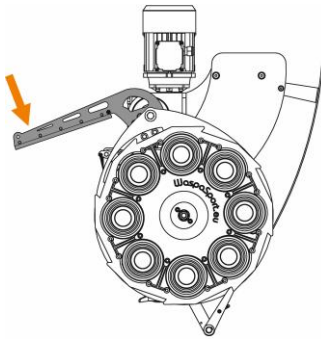
It contains absolutely basic safety rules.

THE DIRECTION OF THROW

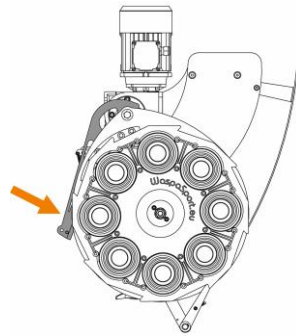


- The direction in which the clays are thrown from the Eagle machine is shown on the picture. This is the conventional front of the machine, which will be referred to in many places in this manual.
- Make sure that no one is in the danger zone when the machine is armed. The danger zone is the area in front of the machine, 10m further than the maximum flight range of the clay.
- Before starting, stand behind the machine and make sure there is no one in front. Flying debris from damaged clays may be thrown out of the clays' normal flight path.
- In the Eagle LH240 and LHV240 models, the throwing angle changes automatically, so you should be extra careful and secure a wider space in front of the thrower that clays may reach.

NOTE: The phrase “arm in the safe position” used in this manual refers to the position in which the throwing arm is placed. The throwing arm is in the safe (released) position when it is to the left of the clay exit axis (as shown in the drawing below). When the arm is almost in the “6 o’clock” position, the thrower is armed and ready to throw. Be very careful as at this point the thrower can be released at any time and throw a clay pigeon if it was present on the sliding plate.

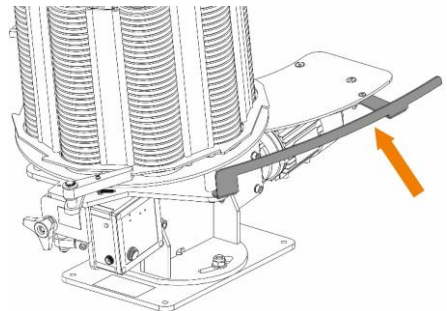


Throwing arm in safe position
(released)



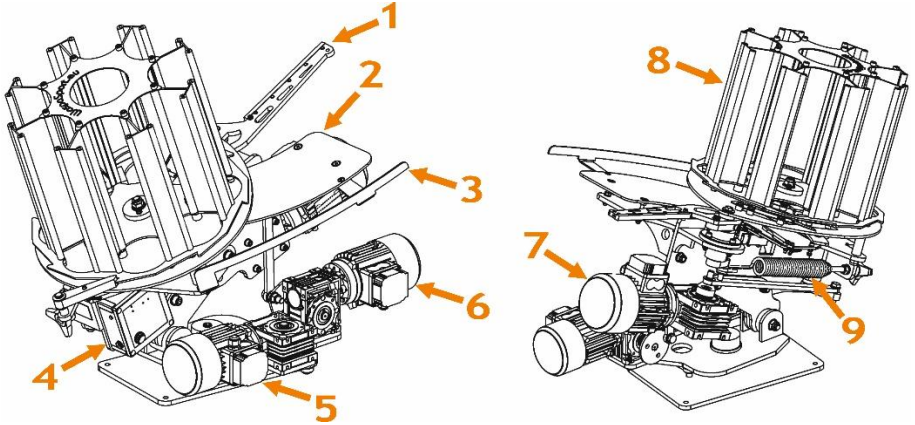
Throwing arm in unsafe position
(armed)

This throwing machine is equipped with a throwing arm guard that must be properly installed whenever the machine is in use. It indicates a dangerous area of the fast-moving throwing arm where no object or body part may be.



DEVICE DESCRIPTION

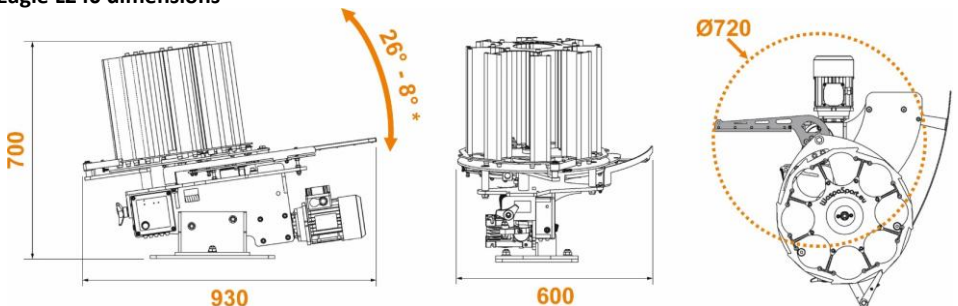
Model	Eagle L240	Eagle LH240	Eagle LHV240
Maximum clays capacity	240 clays		
Clay type	standard, 110mm, 105g		
Weight without clays / with clays	75kg / 100 kg	90 kg / 115 kg	95 kg / 120 kg
Throwing angle	fixed (manual adjustment)	auto. horizontal change	auto. vertical and horizontal change
Throw distance	up to 75 meters		
Re-cocking time	approx. 2 seconds		
Available voltage	12V / 230V / 400V		



1. Throwing arm
2. Sliding plate
3. Throwing arm guard
4. Control box
5. Horizontal motor (LH240 and LHV240 only)
6. Vertical motor (LHV240 only)

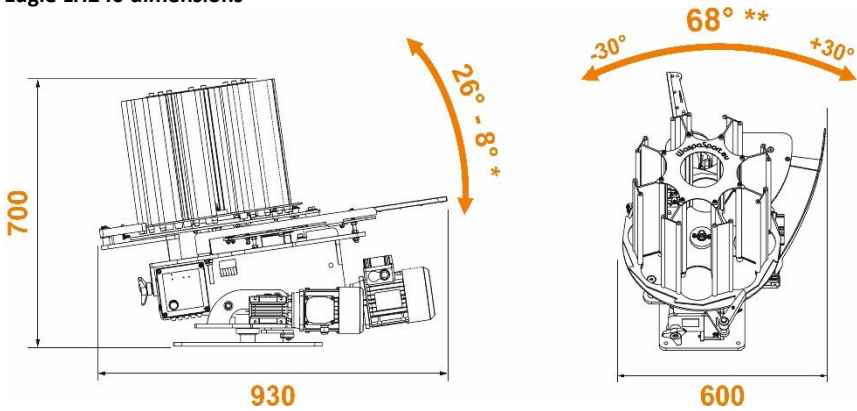
7. Main motor
8. Clay pigeon carousel
9. Main spring

Eagle L240 dimensions



* Manual vertical angle adjustment

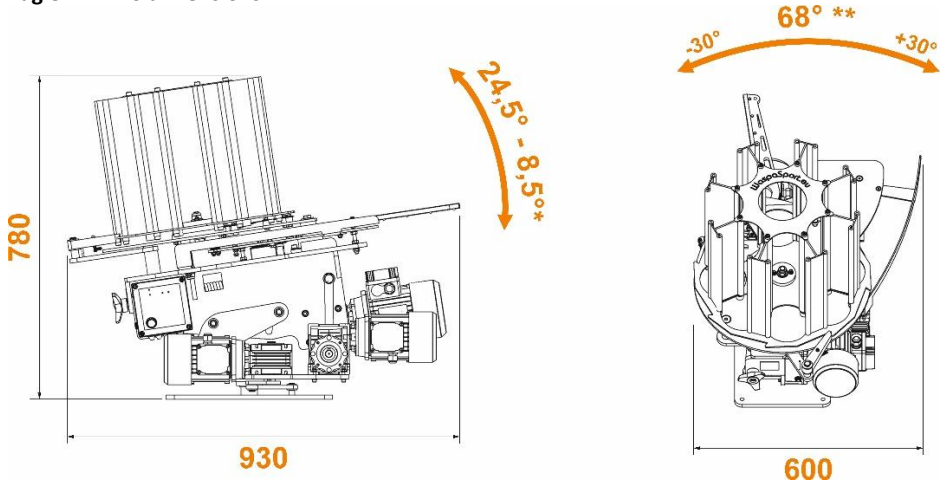
Eagle LH240 dimensions



* Manual vertical angle adjustment

** Automatic horizontal angle movement. Maximum angle range 68° .

Eagle LHV240 dimensions



* Automatic vertical angle movement.

** Automatic horizontal angle movement.

SAFE USE

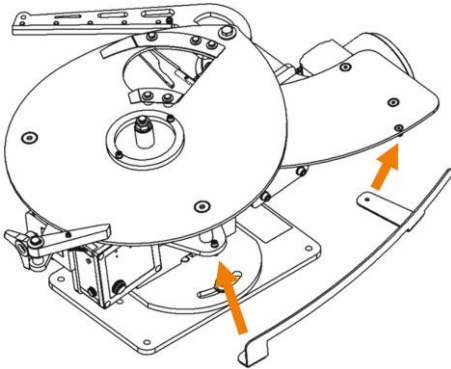
- Only one person fully familiar with the instructions may operate the throwing machine.
- The yellow throwing arm guard indicates the area where the throwing arm moves rapidly. Be careful never to put body parts or objects into this area.
- To reduce the risk of injury from clay debris, do not stand near the thrower when it is in use. Anyone standing near must wear safety glasses.
- Keep children and pets away from the thrower.
- Do not leave the thrower in an unsafe position when it is not in use.
- Do not lift or move the thrower by holding the throwing arm.

GENERAL ASSEMBLY INFORMATION

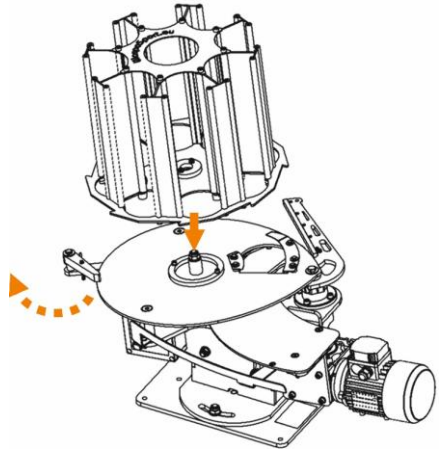
- The thrower must be placed on a flat, level surface. It is necessary to ensure the proper flight path of a clay.
- It is recommended to fix the thrower to the ground to prevent from self-moving after throw.
- For a 12V version throwers, it is important to use efficient and charged batteries.
- For a 230V thrower the electrical installation must be prepared in such way as to avoid the use of too long extension cords, which may lead to incorrect operation of the thrower.

ASSEMBLY GUIDE

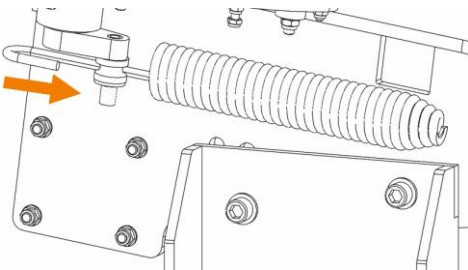
1. Fix the throwing arm guide.



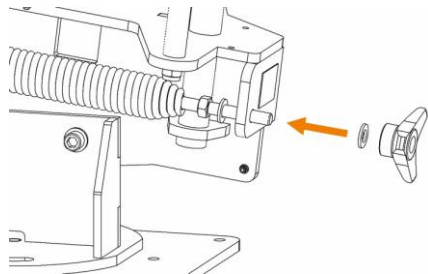
2. Move the plastic carousel pusher away and place the clay carousel on the axle.



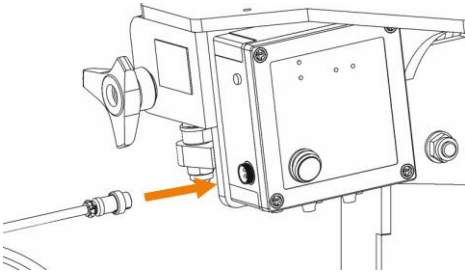
3. Insert the main spring into the sleeve.



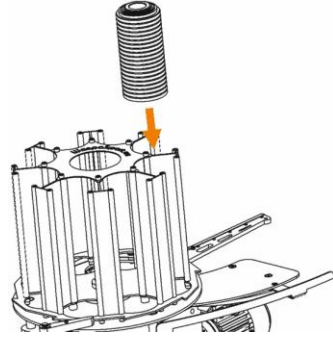
4. Tighten the spring with three-arm knob, adjust the spring tension and lock with nut



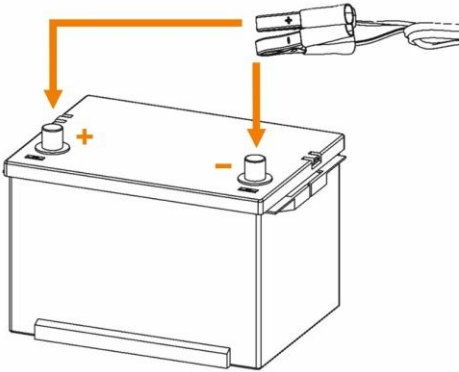
5. Plug the control cable into the socket.



6. Fill the carousel with clays.



7a. **For 12V version.** Connect the thrower to the 12V battery with the red clamp on "+" and the black clamp on "-".



After a short delay, the thrower will activate and begin moving the throwing arm to the starting position.

ATTENTION: Using a battery that is too weak may result in improper operation of the thrower.

7b. **For 230V version.** Plug the power cord into a grounded AC socket.

Set the switch on the control box to the "I" (on) position.



After a short delay, the thrower will activate and begin moving the throwing arm to the starting position.

ATTENTION: Using an extension cord that is too long to connect the thrower may cause the throwing machine will not work properly.

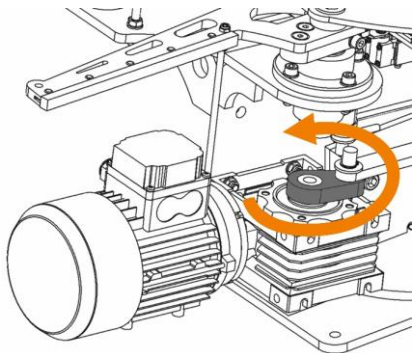
7c. For 400V version. Connect the plug to a three-phase power socket and turn on the main power switch

After a short delay, the thrower will activate and begin moving the throwing arm to the starting position.



VERY IMPORTANT! For 400V version!

Before first start-up, make sure the motor is turning in the right direction. If not, change the phases in the power plug.



When first starting the throwing machine in the 400V version, start the thrower for a very short time so that the engine turns on for a fraction of a second and immediately turns off. Make sure that the clamp and the axis are turning in the right direction as shown in the picture on the left.

Otherwise, change the phases in the power plug and do this step again.

Be very careful when performing this step.

From this point, the thrower is ready to go, so be careful. Throw a few clays to adjust the distance and trajectory to your needs. Set your arm in the safe position. Switch off the machine.

OPERATION OF THE WASPACON AC/DC CONTROL SYSTEM

The WASPACON AC/DC controller is a genuine project for controlling throwing machines. Innovative solutions provide many possibilities, especially in combination with the WASPACON RC wireless remote control and guarantee the correct operation of traps equipped with it.

Depending on the version you choose, your thrower has one of the following controller panels:



Control panel
WASPACON DC
for 12V version



Control panel
WASPACON AC
for 230V version



Control panel
WASPACON 3F
for 400V version

EXPLANATION OF BUTTONS

- **„START / PULL” button** – when pressed it throws the clay, the motor turns off and the throwing arm will not be armed again.
This button should be used to safely release the throwing machine, at the end or between shooting sessions e.g. to load clay pigeons or perform service work.
- **„Vertical movement” button** – (in use for LHV240 model only) turns on/off the vertical movement.
- **„Horizontal movement” button** – (in use for LH240 and LHV240 model only) turns on/off the horizontal movement.

LED LIGHTS EXPLANATION AND TROUBLESHOOTING

Green LED	
<ul style="list-style-type: none"> • Steady light • Flashing 	<p>The controller is enabled, working correctly, no errors.</p> <p>The controller communicates with radio remote control.</p>
Red LED	
<ul style="list-style-type: none"> • Flashing very fast (10 times per second) • Flashing fast (2 times per second) • Flashing slow (once every 2 seconds) (applies to DC power supply only) • Steady light (applies to DC power supply only) 	<p>Spring tension time exceeded. This means that the motor has been trying to re-cock the throwing arm for too long without success. The cause may be an obstacle in the arm's path or a too weak battery (for 12V version). This error causes the thrower to stop working. A restart is required. If the problem persists, contact service.</p> <p>The permissible current value of the main motor has been exceeded or a short circuit has been detected on this motor.</p> <p>Battery is almost discharged. This warning does not turn off the controller, but it is recommended to charge the battery immediately (applies to 12V throwers).</p> <p>The battery is empty. The throwing machine is disabled until a charged battery is connected (applies to 12V throwers).</p>
Vertical movement green LED	
Indicates if the vertical movement is enabled.	
Horizontal movement green LED	
Indicates if the vertical movement is enabled.	

STEP-BY-STEP INSTRUCTIONS ON HOW TO DIAGNOSTICATE THE CAUSE OF AN IMPROPER THROWING MACHINE OPERATION

This manual has been made to perform urgent repairs and avoid stressful situations when using the thrower.

Incorrect operation can be caused by two cases: defective darts or incorrect adjustment of the thrower (or both).

You should start the diagnosis by checking clays. How to do it?!

1. Take clays out of the box, place them on a table and check if they are not stucked together. If it turns out to be true, separate them all before inserting them into the carousel.

2. "Listen" to clays to check if they are cracked. A good clay dropped from a height of 3-4 cm onto a hard surface, e.g. a table top or sheet metal, makes a sound similar to glass or ceramics. A clay with microcracks does not make a proper sound. Such clays must be removed. One cracked clay usually damages several more when its pieces remain in the throwing arm or get stuck under the cutting knives. When clays break, first check whether there are any fragments of clays on the thrower.

3. Check the quality of the clays. It often happens that the manufacturer sells second-quality clays without informing the customer, and such clays cannot be used in automatic throwers. Check whether the clays are of the appropriate fragility - a clay dropped from a height of approx. 10 cm onto a table top or other hard surface cannot break. It also happens that the dimensions of a clay are not standard - the clays must have the same thickness of the lower flange around the entire circumference.

If the thrower still does not operate properly, then proceed to the second stage – checking the thrower itself.

1. With power off, manually rotate the carousel until a clay falls onto the slide plate, then remove it and check whether it is not damaged and whether it makes a proper sound. This operation should be repeated several times, at least until the carousel is fully rotated. If clays fall onto the slide plate damaged, this indicates that the separating (cutting) knives are not set correctly. You should check whether the knives are crushing clays. The longer knife has height adjustment, but mainly check whether the knives are not bent and whether they gently “come in” between clays without squeezing them. To check this, leave one clay in the carousel and rotate it, observing whether the clay moves freely until it falls onto the slide plate – it cannot catch on anything.

2. The next element to check is the throwing arm - visually check that it is not crooked. The throwing arm is made of aluminium, so it can accidentally be bent if someone leans on it or grabs the arm while carrying the thrower.

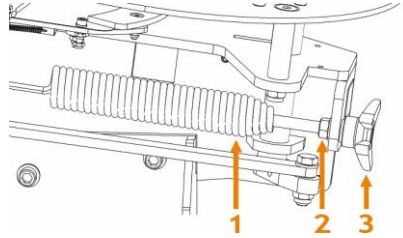
3. The distance of the throwing arm from the sliding plate must be the same along its entire length. Adjusting this distance is described later in this manual. Adjusting the plate should be done as a last resort when other adjustments have failed or if it is necessary to disassemble the throwing arm or sliding plate.

ADJUSTING THE MAIN SPRING

The throwing distance of a clay can be adjusted by tightening or loosening the main spring (1). Adjust the spring tension to your needs, remembering that the more spring is tightened, the further the distance.

To set the desired spring tension, loosen the locknut (2), then tighten or loosen the three-arm knob (3) and secure with the locknut (2).

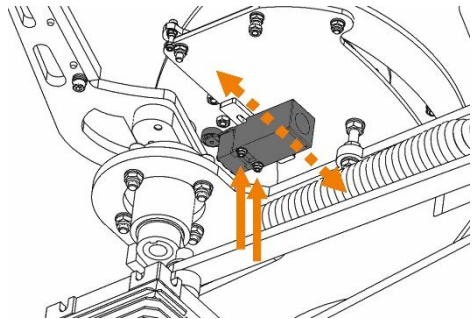
VERY IMPORTANT: It is essential that at minimum spring tension, its coils do not touch each other. Failure to do so may result in damage to the throwing machine.



ADJUSTING THE LIMIT SWITCH

Due to changes in spring tension and battery charge, it may be necessary to adjust the limit switch that is responsible for stopping the throwing arm in the right place. For the reasons mentioned above, such adjustment may be necessary even when the thrower is first started, despite our best efforts to adjust it properly.

To properly adjust the limit switch, loosen the two nuts and move the switch so that the throwing arm stops at the proper location. Remember, that moving the limit switch to the left will stop the throwing arm earlier, and moving it right will stop the throwing arm later.



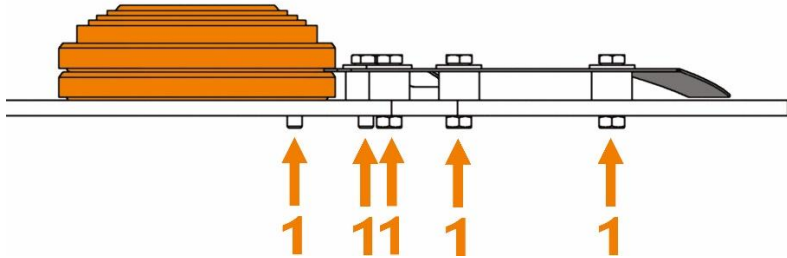
IMPORTANT: MOVING THE LIMIT SWITCH TOO FAR LEFT MAY CAUSE THE CLAYS TO BREAK AT A THROW, AND MOVING THE LIMIT SWITCH TOO FAR RIGHT MAY CAUSE THE THROWING ARM WILL NOT STOP AT ALL AND THE MOTOR WILL RUN NON-STOP, THROWING CLAYS ONE-BY-ONE.

ADJUSTING THE SEPARATING KNIVES



IMPORTANT: AFTER EACH DELIVERY OF CLAYS, EVEN IF IT IS A DELIVERY FROM THE SAME SUPPLIER AS BEFORE, IT IS NECESSARY TO PERFORM THE ADJUSTMENT OF THE SEPARATING KNIVES.

To properly adjust the separating knives, leave only two clays in the carousel, one on top of the other. Then, by manually rotating the carousel, make sure that both separating knives "cut in" exactly into the gap between the two clays. If the lower or upper clay is cut by one of the knives, they should be raised or lowered accordingly by turning the screws (1).



ADJUSTING THE SLIDING PLATE

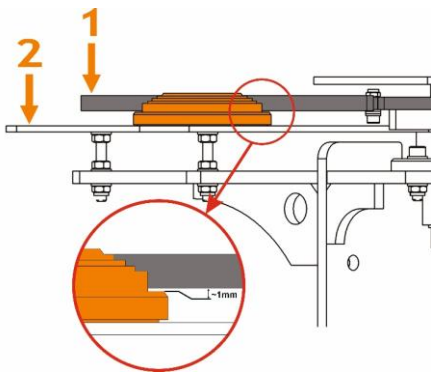


CAUTION: BEFORE MAKING ANY ADJUSTMENTS, DISCONNECT THE THROWER FROM THE POWER SOURCE, REMOVE THE CLAY CAROUSEL, AND REMOVE THE MAIN SPRING.

Due to the natural wear of the main axis bushings, the throwing arm reduces the distance from the sliding plate, so the gap between the throwing arm and the clay should be checked from time to time and adjusted if necessary.

The sliding plate adjustment is carried out when the thrower breaks the clays when throwing, there is an irregular trajectory of the clay or the flight is very short, and all other adjustments have not produced a result.

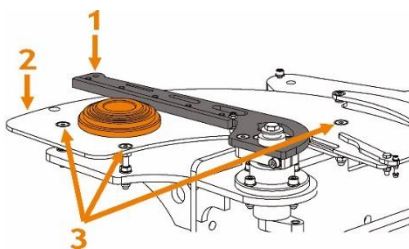
The main principle of this adjustment is to maintain a constant space between the throwing arm and the clay.



To make the adjustment, place one clay on the sliding plate (2). Move the throwing arm (1) against the clay and check the gap between the top of the clay flange and the bottom of the throwing arm as shown in the picture. The gap should be about 1 mm.

Then rotate the throwing arm with the clay in a circle to check that the gap is constant over the entire surface of the sliding plate.

If the proper gap between the clay pigeon and the throwing arm is not constant along the entire length of the sliding plate, it is necessary to adjust the sliding plate. To do this, use the adjustment screws (3) to lower or raise the sliding plate to achieve the desired effect.



* For clarity, some elements have been removed from the drawing.

TROUBLESHOOTING



CAUTION: BEFORE MAKING ANY REPAIRS OR ADJUSTMENTS, MAKE SURE THE THROWING ARM IS IN THE SAFE POSITION AND THE LAUNCHER IS DISCONNECTED FROM THE POWER SOURCE.

1. The motor does not work:

- Power is not supplied. Connect the thrower to power source.
- Fuses have blown. Remove the electrical box cover and check the fuses. If the fuses continue to blow, check the wiring and power source to determine the cause before continuing.
- Power source is insufficient (check with a voltmeter) to see if the battery is weak (for 12V version).
- Electrical connections are dirty or loose.
- Electrical connections are incorrect (see Start-up Instructions).
- Electrical box is damaged.
- Main spring motor is damaged.

2. The motor runs but throwing arm does not move:

- The power source is insufficient (check with a voltmeter).
- The throwing arm is blocked, e.g. by fragments of a clay. Remove the obstacles (**PROCEED WITH EXTREME CAUTION!**).
- The drive transmission mechanism does not work (the engine turns, but the gear axle does not rotate).
- The pin on the gear clamp or the pin on the main axle clamp is damaged. It must be replaced.
- The main axle is damaged. It must be replaced.
- In special cases, when the power goes out while the spring is being tensioned, it may happen that the motor will not have the power to continue operating after the power is restored (mainly applies to 230V motors). To fix the error, push the arm in the direction of the arm movement with the power on until the engine is ready to work automatically. Hold your hand on the outside of the throwing arm. **PROCEED WITH EXTREME CAUTION!**

3. The throwing arm is in armed position but does not throw clays:

- The power source is insufficient. Check.
- The main spring is damaged. It must be replaced.
- The START button on the cable control or wireless remote control does not work. Try starting the throwing arm with the switch located on the thrower.
- The throwing arm is blocked by a clay or debris. Unblock. **PROCEED WITH EXTREME CAUTION.**

- The throwing arm is bent and catches on other parts of the thrower. Be sure to replace the throwing arm.

4. Throwing arm does not stop and continuously throw clays:

- The main spring is too loose. Tension the spring.
- The limit switch is incorrectly set or damaged. Adjust the limit switch and if this does not help, replace it.
- The relay in the electrical box is damaged, "stuck". Disconnect the thrower from the power source or replace the relay.
- The START button on the cable control or wireless remote control is mechanically pressed or the wire is damaged. Check by disconnecting the wire or radio receiver from the controller.
- The electrical circuit may be damaged.

5. Abnormal noises:

- Tighten all screws.
- The main spring is not tensioned enough and the coils touch each other. Tension the main spring. It is essential that the spring coils do not touch each other at minimum tension.
- The throwing arm is bent and catches on other parts.
- The clay carousel is assembled incorrectly.
- The carousel axle is not lubricated.
- The one-way bearing in the main axle is damaged. The bearing assembly must be replaced.

6. The clays are being broken immediately after throw:



IMPORTANT: Very often the cause of clay pigeons breaking is not the thrower, but the quality of the clay pigeons. First of all, check the quality of the clay pigeons for damage or cracks, for example by "knocking" them. If possible, use a clay from another delivery. Also remember that once used, the clays cannot be reused in automatic throwing machines.

- The separating knives need adjustment. Adjust the knives according to the instructions.
- The clays are damaged before they are loaded into the carousel.
- The clays are damaged when loaded into the carousel.
- Check that there are no obstacles in the path of the moving clay.
- The rubber on the throwing arm is worn or damaged. Replace it with a new one.
- The throwing arm is bent. Replace it.
- The sliding plate is not adjusted. Perform the adjustment as described in this manual
- The throwing arm has no contact with clay when the machine is ready to throw. **The throwing arm should have contact with the clay when the machine is armed.** Adjust the limit switch.

7. Clays don't fall from the carousel onto the sliding plate:

- Different clays were used (different diameter, thickness).
- The clay carousel rods are damaged and prevent the clays from falling freely.
- The carousel base is damaged.
- The carousel does not rotate. The plastic pusher does not move the carousel, e.g. its spring is damaged or not properly installed.
- Check the plastic pusher and its lubrication.

DECLARATION OF CONFORMITY

We declare that the following throwing machine:

WASPA Eagle L240, WASPA Eagle LH240, WASPA Eagle LHV240

complies with:

Machinery directive: 2006/42/WE

EMC: 2004/108/WE, EN 55022:2010, EN 55024:2010

GPS: 2001/95/WE, EN 60950-1:200



Place and date:

Stamp and signature: